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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,021	05/31/2001	Hideyuki Ando	1083.1080	8425
21171	7590	10/04/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			COLON, CATHERINE M	
			ART UNIT	PAPER NUMBER
			3623	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*ne*

## Office Action Summary

Application No.

09/870,021

Applicant(s)

ANDO ET AL.

Examiner

C. Michelle Colon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 31 May 2001.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. The following is a Non-Final Office Action in response to the communication received on May 31, 2001. Claims 1-18 are now pending in this application.

#### ***Information Disclosure Statement***

2. The examiner has reviewed the patents supplied in the Information Disclosure Statement (IDS) provided on May 31, 2001.

#### ***Abstract***

3. The abstract of the disclosure is objected to because of undue length. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Objections***

4. Claims 8-14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. See MPEP § 608.01(n), "Infringement Test" for dependent claims. The test for a proper dependent claim is whether the dependent claim includes every limitation of the parent claim. A proper dependent claim shall not conceivably be infringed by anything which would not also infringe the basic claim. Claims 8-14 fail the infringement test as the dependent claims do not include every limitation of their parent claims.

### ***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1, 2, 8 and 9 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

As per the first prong of the test, for a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or

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advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences) and therefore are found to be non-statutory subject matter. For a process claim to be satisfactory, the recited process must somehow apply, involve, use, or advance the technological arts.

In the present case, method claims 1, 2, 8 and 9 merely recite the steps for predicting sales volume or market share of a product; however, the recited steps do not apply, involve, use, or advance the technological arts since all of the recited steps can be performed in person or by use of a pencil and paper and without the need of a computer or other technology.

As per the second prong of the test, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result. In the present case, the claimed invention uses a neural network (i.e., concrete) to predict sales volume or market share of a product (i.e., useful and tangible).

Although the recited process produces a useful, concrete, and tangible result, since the claimed invention, as a whole, is not within the technological arts as explained above, claims 1, 2, 8 and 9 are directed to non-statutory subject matter.

Examiner notes that while claims 8 and 9 recite a system, since they are in improper dependent form as discussed above, it is unclear what statutory class is actually intended for claims 8 and 9. Therefore, claims 8 and 9 have been included in the present 35 U.S.C. 101 technological arts rejection. Examiner also notes the method claims that include a recitation of a neural network to perform calculations are deemed satisfactory with regard to 35 U.S.C. 101 technological arts in light of the disclosure in

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the specification and in light of the fact that a neural network performing calculations must use a computer and/or processing device to do so.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation, "said products" beginning in line 8 and throughout the remainder of the claim. There is insufficient antecedent basis for this limitation in the claim. Since claim 1 only recites "new product" and "past products" before line 8, it is unclear which products the phrase, "said products," is referring to.

Claim 1 also recites the limitation, "said new product and confidence intervals in the respective layers" in line 23. There is insufficient antecedent basis for this limitation in the claim as it is unclear where "confidence intervals" were created or calculated previously in the claim. This insufficient antecedent basis also makes unclear what the relationship between the "confidence intervals" and "the respective layers" is. For examination purposes, Examiner will interpret "confidence intervals" to mean rankings or weightings.

Additionally, claims 3, 4 and 6 recite the limitation, "said products" beginning in line 10 and throughout the remainder of the claims. There is insufficient antecedent

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basis for this limitation in the claims. Since claims 3, 4 and 6 only recite "new product" and "past products" before line 10, it is unclear which products the phrase, "said products," is referring to.

Claim 15 recites the limitation, "said products" beginning in line 12 and throughout the remainder of the claim. There is insufficient antecedent basis for this limitation in the claim. Since claim 15 only recites "new product" and "past products" before line 12, it is unclear which products the phrase, "said products," is referring to.

Claims 16 and 18 recite the limitation, "said products" beginning in line 9 and throughout the remainder of the claims. There is insufficient antecedent basis for this limitation in the claims. Since claims 16 and 18 only recite "new product" and "past products" before line 9, it is unclear which products the phrase, "said products," is referring to.

Claim 17 recites the limitation, "said products" beginning in line 8 and throughout the remainder of the claim. There is insufficient antecedent basis for this limitation in the claim. Since claim 17 only recites "new product" and "past products" before line 8, it is unclear which products the phrase, "said products," is referring to.

With regard to the insufficient antecedent basis issues in the claims with the limitation, "said products," Examiner will interpret "said products" to include any or all products (i.e., past, present or new).

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by  
“Forecasting and Analysis of Marketing Data Using Neural Networks,” Yao et al., 1998.

As per claim 1, Yao et al. discloses a method of predicting an initial input of a new product for predicting a sales volume or market share at the launch of a new product, comprising steps of:

making more than one people numerically evaluate a plurality of past products and said new product, with respect to a plurality of factors which are considered to influence a sales volume or market share (paragraphs 1, 2 and 14; Table 2; The article discloses marketing decision makers using a computer-based Decision Support System (DSS) to evaluate factors that influence the sales performance of a product.);

calculating comprehensive evaluations on said products and said new products for each one of said people based on numerical values with respect to said factors (paragraph 20; The DSS uses a neural network model to evaluate the factors associated with the products. The factors have to be converted into numerical values, as the article discloses, neural networks only work with real numbers.), calculating correlation coefficients between the comprehensive evaluations on said products by each one of said people and actual sales volumes or actual market shares of said



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products, obtaining relationships between the comprehensive evaluations on said products by each one of said people and the actual sales volumes or actual market shares of said products (paragraph 40; Tables 8-10; Correlation coefficients are calculated for each factor, indicating the relationship between the factor and the sales volume.), calculating a sales volume or market share of said new product for each one of said people based on the relationships and the comprehensive evaluations on said new product (Figure 3; The system calculate sales volume for 60 products.), layering the calculated sales volumes or market shares of said new product for said more than one people based on the correlation coefficients for said more than one people (paragraphs 23 and 29; Figure 2; The neural network uses layering to determine which factors are most influential on the sales performance of the product. Each factor's correlation coefficient is refined at each layer.), calculating average values of the sales volumes or market shares of said new product and confidence intervals in the respective layers (paragraphs 27, 29 and 40; Figures 2 and 3; Each layer has an associated weight, or confidence interval. Additionally the numerical data calculated for each layer is used as input for the next layer, thus decreasing the number of nodes for each subsequent layer. Figure 3 shows a single node representing the sales revenue for the products, and is therefore, the average sales revenue for the products.); and predicting a sales volume or market share of said new product based on the average values and the confidence intervals for the respective layers (paragraphs 21, 38 and 40; Table 10; Figure 3; The purpose of using applying the neural network using the DSS is to predict the sales volume based on the most influential factors.).

As per claim 2, Yao et al. discloses a method of predicting an initial input of a new product as set forth in Claim 1, wherein the relationships between the comprehensive evaluations on said products and the actual sales volumes or actual market shares of said products are calculated through regression analysis in which the comprehensive evaluations are used as a predictor variable and the actual sales volumes or actual market shares are used as a criterion variable (paragraphs 5, 27 and 40; Tables 8-10; Correlation coefficients are calculated for each factor, indicating the relationship, or influence, between the factor and the sales volume. Each factor's correlation coefficient is refined at each layer and used as input for the next layer, thus using regression analysis. The correlation coefficients in addition to the predicted sales values and the actual sales value are all used as variables in the neural network as they are all propagated through the neural network to calculate and refine the relationship between the factors and the sales performance.).

Claims 3-18 recite substantially similar subject matter as claims 1 and 2 above. Therefore, claims 3-18 are rejected on the same basis as claims 1 and 2 above.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Cunningham et al. (U.S. 6,029,139) discusses a method and system for optimization of promotional sales using past product data;

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- Cragun et al. (U.S. 5,774,868) discusses sales promotion selection system using neural networks;
- Teran et al. (U.S. 5,521,814) discusses a performance model that uses a neural network to determine relationships between data sets;
- Poh et al. "Neural Networks for the Analysis and Forecasting of Advertising and Promotion Impact," *International Journal of Intelligent Systems in Accounting, Finance & Management*, 1998 discusses using neural networks to predict advertising and promotion influence on products.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Michelle Colon whose telephone number is 571-272-6727. The examiner can normally be reached Monday – Friday from 8:30am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz, can be reached at 571-272-6729.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

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***P.O. Box 1450***

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or faxed to:

703-872-9306 [Official Communications; including After Final  
communications labeled "Box AF"]

571-273-6727 [For status inquiries, draft communication, labeled  
"Proposed" or "Draft"]

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C. Michelle Colón  
Patent Examiner  
Art Unit 3623

September 24, 2005